R307. Environmental Quality, Air Quality.

R307-335. Ozone Nonattainment and Maintenance_Areas: Degreasing and Solvent Cleaning Operations.

R307-335-1. Purpose.

The purpose of this rule is to establish Reasonably Available Control Technology (RACT) for degreasing and solvent cleaning operations that are located in an ozone nonattainment or maintenance area. The rule is based on federal control technique guidance documents.

R307-335-2. Applicability.

R307-335 applies to all degreasing or solvent cleaning operations that use volatile organic compounds (VOCs) and are located in any ozone nonattainment or maintenance area.

R307-335-3.

The following additional definitions apply to R307-335:

"Batch Open Top Vapor Degreasing" means the batch process of cleaning and removing grease and soils from metal surfaces by condensing hot solvent vapor on the colder metal parts.

"Cold Cleaning" means the batch process of cleaning and removing soils from metal surfaces by spraying, brushing, flushing or immersing while maintaining the solvent below its boiling point.

"Conveyorized Degreasing" means the continuous process of cleaning and removing greases and soils from metal surfaces by using either cold or vaporized solvents.

"Freeboard Ratio" means the freeboard height divided by the width of the degreaser.

"Open Top Vapor Degreaser" means the batch process of cleaning and removing soils from metal surfaces by condensing low solvent vapor on the colder metal parts.

"Separation Operation" means any process that separates a mixture of compounds and solvents into two or more components. Specific mechanisms include extraction, centrifugation, filtration, and crystallization.

"Solvent Metal Cleaning" means the process of cleaning soils from metal surfaces by cold cleaning, open top vapor degreasers, or conveyorized degreasing.

R307-335-4. Cold Cleaning Facilities.

No owner or operator shall operate a degreasing or solvent cleaning operation unless conditions (1) through (7) below are met.

(1) A cover shall be installed which shall remain closed except during actual loading, unloading or handling of parts in cleaner. The cover shall be designed so that it can be easily operated with one hand if:

(a) the volatility of the solvent is greater than 2 kPa (15 mm Hg or 0.3 psi) measured at 38 degrees C (100 degrees F),

(b) the solvent is agitated, or

(c) the solvent is heated.

(2) An internal draining rack for cleaned parts shall be

installed on which parts shall be drained until all dripping ceases. If the volatility of the solvent is greater than 4.3 kPa (32 mm Hg at 38 degrees C (100 degrees F)), the drainage facility must be internal, so that parts are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

(3) Waste or used solvent shall be stored in covered containers. Waste solvents or waste materials which contain solvents shall be disposed of by recycling, reclaiming, by incineration in an incinerator approved to process hazardous materials, or by an alternate means approved by the executive secretary.

(4) Tanks, containers and all associated equipment shall be maintained in good operating condition and leaks shall be repaired immediately or the degreaser shall be shutdown.

(5) Written procedures for the operation and maintenance of the degreasing or solvent cleaning equipment shall be permanently posted in an accessible and conspicuous location near the equipment.

(6) If the solvent volatility is greater than 4.3 kPa (33 mm Hg or 0.6 psi) measured at 38 degrees C (100 degrees F), or if solvent is heated above 50 degrees C (120 degrees F), then one of the following control devices shall be used:

(a) freeboard that gives a freeboard ratio greater than 0.7;

(b) water cover if the solvent is insoluble in and heavier than water);

(c) other systems of equivalent control, such as a refrigerated chiller or carbon absorption.

(7) If used, the solvent spray shall be a solid fluid stream at a pressure that does not cause excessive splashing and may not be a fine, atomized or shower type spray.

R307-335-5. Open Top Vapor Degreasers.

Owners or operators of open top vapor degreasers shall, in addition to meeting the requirements of R307-335-4(3), (4) and (5),

(1) Equip the vapor degreaser with a cover that can be opened and closed without disturbing the vapor zone. The cover shall be closed except when processing work loads through the degreaser;

(2) Install one of the following control devices:

(a) Equipment necessary to sustain:

(i) a freeboard ratio greater than or equal to 0.75, and

(ii) a powered cover if the degreaser opening is greater than 1 square meter (10 square feet),

(b) Refrigerated chiller,

(c) Enclosed design (cover or door opens only when the dry part is actually entering or exiting the degreaser),

(d) Carbon adsorption system, with ventilation greater than or equal to 15 cubic meters per minute per square meter (50 cubic feet per minute per square foot) of air/vapor area when cover is open and exhausting less than 25 parts per million of solvent averaged over one complete adsorption cycle;

(3) Minimize solvent carryout by:

(a) Racking parts to allow complete drainage,

(b) Moving parts in and out of the degreaser at less than 3.3 meters per minute (11 feet per minute),

(c) Holding the parts in the vapor zone at least 30 seconds or until condensation ceases,

(d) Tipping out any pool of solvent on the cleaned parts before removal, and

(e) Allowing the parts to dry within the degreaser for at least 15 seconds or until visibly dry.

(4) Spray parts only in or below the vapor level,

(5) Not use ventilation fans near the degreaser opening, nor provide exhaust ventilation exceeding 20 cubic meters per minute per square meter (65 cubic feet per minute per square foot) in degreaser open area, unless necessary to meet State and Federal occupational, health, and safety requirements. The exhaust ventilation flow indicated above shall be measured using EPA Reference Methods 1 and 2 of 40 CFR Part 60, or by EPA-approved equivalent state methods;

(6) Not degrease porous or absorbent materials, such as cloth, leather, wood or rope;

(7) Not allow work loads to occupy more than half of the degreaser's open top area;

(8) Ensure that solvent is not visually detectable in water exiting the water separator;

(9) Install safety switches on the following:

(a) Condenser flow switch and thermostat (shuts off sump heat if condenser coolant is either not circulating or too warm); and

(b) Spray switch (shuts off spray pump if the vapor level drops excessively, i.e., greater than 10 cm (4 inches); and

(10) Ensure that the control device specified by (2)(b) or (d) above meet the applicable requirements of R307-340-4 and 15.

Open top vapor degreasers with an open area smaller than one square meter (10.9 square feet) are exempt from (2)(b) and (d) above.

R307-335-6. Conveyorized Degreasers.

Owners and operators of conveyorized degreasers shall, in addition to meeting the requirements of R307-335-4(3), (4) and (5) and R307-335-5(5):

(1) Install one of the following control devices for conveyorized degreasers with an air/vapor interface equal to or greater than 2.0 square meters (21.6 square feet):

(a) Refrigerated chiller or

(b) Carbon adsorption system, with ventilation greater than or equal to 15 cubic meters per minute per square meter (50 cubic feet per minute per square foot) of air/vapor area when downtime covers are open, and exhausting less than 25 parts per million of solvent, by volume, averaged over a complete adsorption cycle.

(2) Equip the cleaner with equipment, such as a drying tunnel or rotating (tumbling) basket, sufficient to prevent cleaned parts from carrying out solvent liquid or vapor.

(3) Provide downtime covers for closing off the entrance and exit during shutdown hours. Ensure that down-time cover is placed over entrances and exits of conveyorized degreasers immediately after the conveyor and exhaust are shutdown and is removed just before they are started up.

(4) Minimize carryout emissions by racking parts for best drainage and maintaining the vertical conveyor speed at less than 3.3 meters per minute (11 feet per minute).

(5) Ensure that the control device specified by (1)(a) or (b) above meet the applicable requirements of R307-340-4 and 15.

(6) Minimize openings: Entrances and exits should silhouette work loads so that the average clearance (between parts and the edge of the degreaser opening) is either less than 10 cm (4 inches) or less than 10% of the width of the opening.

(7) Install safety switches on the following:

(a) Condenser flow switch and thermostat - shuts off sump heat if coolant is either not circulating or two warm;

(b) Spray switch - shuts off spray pump or conveyor if the vapor level drops excessively, i.e., greater than 10 cm or (4 inches); and

(c) Vapor level control thermostat - to shuts off sump level if vapor level rises too high.

(8) Ensure that solvent is not visibly detectable in the water exiting the water separator.

R307-335-7. Alternate Methods of Control.

(1) Any person may apply to the executive secretary for approval of an alternate test method, an alternate method of control, an alternate compliance period, an alternate emission limit, or an alternate monitoring schedule. The application must include a demonstration that the proposed alternate produces an equal or greater air quality benefit than that required by R307-335, or that the alternate test method is equivalent to that required by these rules. The executive secretary shall obtain concurrence from EPA when approving an alternate test method, an alternate method of control, an alternate compliance period, an alternate emission limit, or an alternate monitoring schedule.

(2) Manufacturer's operational specifications, records, and testings of any control system shall use the applicable EPA Reference Methods of 40 CFR Part 60, the most recent EPA test methods, or EPA-approved state methods, to determine the efficiency of the control device. In addition, the owner or operator must meet the applicable requirements of record keeping for any control device. A record of all tests, monitoring, and inspections required by R307-335 shall be maintained by the owner or operator for a minimum of 2 years and shall be made available to the executive secretary or the executive secretary’s representative upon request. Any malfunctioning control device shall be repaired within 15 calendar days after it is found by the owner or operator to be malfunctioning, unless otherwise approved by the executive secretary.

(3) For purposes of determining compliance with emission limits, VOCs and nitrogen oxides will be measured by the test

methods identified in federal regulation or approved by the executive secretary. Where such a method also inadvertently measures compounds with negligible photochemical reactivity, an owner or operator may exclude these negligibly reactive compounds when determining compliance with an emissions standard.

R307-335-8 Compliance Schedule.

All sources within any newly designated nonattainment area for ozone shall be in compliance with this rule within 180 days of the effective date of designation to nonattainment.

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